

09/744100

10 Rest. PWT 31 AUG 2001

SEQUENCE LISTING

<110> Cahoon, Rebecca E.
Gutteridge, Steven
Lee, Jian Ming
Rafalski, Antoni

<120> Ornithine Biosynthesis Enzymes

<130> BB-1174

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<141> 2001-01-18

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<151> 1998-07-17

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<170> Microsoft Office 97

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<211> 1201

<212> DNA

<213> Zea mays

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<211> 345

<212> PRT

<213> Zea mays

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35 40 45

Ser Thr Ala Ala Pro Ser Pro Ser Ser Ala Ala Ala Thr Ala Ser
50 55 60

Leu Ser Arg Val Asp Val Leu Ser Glu Ala Leu Pro Phe Ile Gln Arg
65 70 75 80

Phe Lys Gly Lys Thr Val Val Val Lys Tyr Gly Gly Ala Ala Met Lys
85 90 95

Ser Pro Glu Leu Gln Ala Ser Val Ile Arg Asp Leu Val Leu Leu Ser
100 105 110

Cys Val Gly Leu Arg Pro Val Leu Val His Gly Gly Pro Glu Ile
115 120 125

Asn Ser Trp Leu Leu Arg Val Gly Val Glu Pro Gln Phe Arg Asp Gly
130 135 140

Leu Arg Val Thr Asp Ala Leu Thr Met Glu Val Val Glu Met Val Leu
145 150 155 160

Val Gly Lys Val Asn Lys Asn Leu Val Ser Leu Ile Asn Ile Ala Gly
165 170 175

Gly Thr Ala Ile Gly Leu Cys Gly Lys Asp Ala Arg Leu Ile Thr Ala
180 185 190

Arg Pro Ser Pro Asn Ala Ala Leu Gly Phe Val Gly Glu Val Ser
195 200 205

Arg Val Asp Ala Thr Val Leu His Pro Ile Ile Ala Ala Gly His Ile
210 215 220

Pro Val Ile Ala Thr Val Ala Ala Asp Glu Thr Gly Gln Ala Tyr Asn
225 230 235 240

Ile Asn Ala Asp Thr Ala Ala Gly Glu Ile Ala Ala Val Gly Ala
245 250 255

Glu Lys Leu Leu Leu Leu Thr Asp Val Ser Gly Ile Leu Ala Asp Arg
260 265 270

Asn Asp Pro Gly Ser Leu Val Lys Val Val Asp Ile Ala Gly Val Arg
275 280 285

Lys Met Val Ala Asp Gly Lys Val Ala Gly Gly Met Ile Pro Lys Val
290 295 300

Glu Cys Cys Val His Ala Leu Ala Gln Gly Val His Thr Ala Ser Ile
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Ile Asp Gly Arg Val Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp
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Glu Gly Thr Gly Thr Met Ile Thr Gly
340 345

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 <212> DNA
 <213> Oryza sativa

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 <212> PRT
 <213> Oryza sativa

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 <223> Xaa=ANY AMINO ACID

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 20 25 30
 Ala Ala Ser Pro Ala Pro Arg Arg Cys Leu Arg Leu Ala Val Thr Ser
 35 40 45
 Ala Ala Ala Pro Ala Ala Ser Ser Ala Glu Ala Ala Ala Leu Ser
 50 55 60
 Arg Val Asp Val Leu Ser Glu Ala Leu Pro Phe Ile Gln Arg Phe Lys
 65 70 75 80
 Gly Lys Thr Val Val Lys Tyr Gly Gly Ala Ala Met Lys Ser Pro

85	90	95	
Glu Leu Gln Ala Ser Val Ile Arg Asp	Leu Val Leu Leu Ser Cys Val		
100	105	110	
Gly Leu His Pro Val Leu Val His Gly	Gly Gly Pro Glu Ile Asn Ser		
115	120	125	
Trp Leu Leu Arg Val Gly Val Glu Pro Gln Phe Arg	Asn Gly Leu Arg		
130	135	140	
Val Thr Asp Ala Leu Asn Met Glu Val Val Glu	Met Val Leu Val Arg		
145	150	155	160
Lys Val Asn Lys Glu Leu Leu Ser Leu Ile Lys	Leu Pro Gly Gly Ser		
165	170	175	
Ala Val Ser Leu Cys Trp Lys Glu Ala Arg Leu	Leu Asn Glu Arg Pro		
180	185	190	
Ser Pro Xaa Glu Lys Gly Leu Arg Phe Val Gly	Val Trp Arg Val		
195	200	205	
Asp Ala Thr Val Leu His Pro Ile Ile Ala Ser	Gly His Ile Pro Val		
210	215	220	
Ile Ala Thr Val Gly Ala Asp Glu Thr Gly	Gln Ala Tyr Asn Ile Asn		
225	230	235	240
Ala Asp Thr Ala Ala Gly Glu Ile Ala Ala	Ala Val Gly Ala Glu Lys		
245	250	255	
Leu Leu Leu Thr Asp Val Ser Gly Ile Leu Ala Asp	Arg Asn Asp		
260	265	270	
Pro Gly Ser Leu Val Lys Glu Ile Asp Ile Ala Gly	Val Arg Gln Met		
275	280	285	
Val Ala Asp Gly Gln Val Ala Gly Gly Met Ile Pro	Lys Val Glu Cys		
290	295	300	
Cys Val Arg Ala Leu Ala Gln Gly Val His Thr	Ala Ser Ile Ile Asp		
305	310	315	320
Gly Arg Val Pro His Ser Leu Leu Leu Glu Ile	Leu Thr Asp Glu Gly		
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Thr Gly Thr Met Ile Thr Gly			
340			
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<211> 1204			
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ccaccgcgcc atttccgcgg tggcgaacgc ggcgcaacct ccactcgccc ccggccactgc	180		
caccgagggt cagtagccgag tcgatgtgct ctcggagtcg ctccccttca tccagaaatt	240		

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ccgcgacggc	ctcccggtca	ccgaccccga	caccatggag	atcgctctca	tggtcctcgt	480
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cggctacgtc	ggcgagggtcg	cacgcgtcga	tcccgccgtc	ctccgctccc	taatcgacac	660
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gattgacata	aaaggagtga	agaaaatgat	ggaagatgga	aaagtgggt	gtgaaatgat	900
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<213> Glycine max

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20	25		30			
Pro Ser Thr Arg Leu Arg His Arg Ala Ile Ser Ala Val Ala Asn Ala						
35	40		45			
Ala Gln Pro Pro Leu Ala Ala Ala Thr Ala Thr Glu Gly Gln Tyr Arg						
50	55		60			
Val Asp Val Leu Ser Glu Ser Leu Pro Phe Ile Gln Lys Phe Arg Gly						
65	70		75		80	
Lys Thr Ile Val Val Lys Tyr Gly Gly Ala Ala Met Lys Ser Pro Glu						
85	90		95			
Leu Gln Ala Ser Val Ile Asn Asp Leu Val Leu Leu Ser Cys Val Gly						
100	105		110			
Leu Arg Pro Val Leu Val His Gly Gly Pro Glu Ile Asn Ser Trp						
115	120		125			
Leu Gly Arg Leu Asn Ile Pro Ala Val Phe Arg Asp Gly Leu Arg Val						
130	135		140			
Thr Asp Ala Asp Thr Met Glu Ile Val Ser Met Val Leu Val Gly Lys						
145	150		155		160	
Val Asn Lys Thr Leu Val Ser Leu Ile Asn Lys Ala Gly Ala Thr Ala						
165	170		175			
Val Gly Leu Ser Gly Met Asp Gly Arg Leu Leu Thr Ala Arg Pro Ala						
180	185		190			

Pro Lys Ala Ala Asp Leu Gly Tyr Val Gly Glu Val Ala Arg Val Asp
195 200 205

Pro Ala Val Leu Arg Ser Leu Ile Asp Thr Ser His Ile Pro Val Val
210 215 220

Thr Ser Val Ala Ala Asp Glu Ser Gly Gln Pro Tyr Asn Ile Asn Ala
225 230 235 240

Asp Thr Val Ala Gly Glu Leu Ala Ala Ser Leu Gly Ala Glu Lys Leu
245 250 255

Ile Leu Leu Thr Asp Val Ala Gly Ile Leu Glu Asp Arg Asn Asp Pro
260 265 270

Asp Ser Leu Val Lys Lys Ile Asp Ile Lys Gly Val Lys Lys Met Met
275 280 285

Glu Asp Gly Lys Val Gly Gly Gly Met Ile Pro Lys Val Asn Cys Cys
290 295 300

Val Arg Ser Leu Ala Gln Gly Val Ile Thr Ala Ser Ile Ile Asp Gly
305 310 315 320

Arg Val Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp Glu Gly Ala
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Gly Thr Met Ile Thr Gly
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ggctccgcgt	ctcggcctcc	tcctcctccc tggcgccagc gcaggccgcg tccgcggcgc 240
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gcccgagat	caactcctgg	ctgcagcgcg tcggggtcta gcccagttc cgcaacggcc 480
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 <213> *Triticum aestivum*

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 <223> Xaa=ANY AMINO ACID

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 <222> (144)..(160)
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Ser Ala Pro His Gly Arg Arg Gly Leu Arg Val Ser Ala Ser Ser Ser
 35 40 45

Ser Leu Ala Pro Ala Gln Ala Ala Ser Ala Ala Leu Asn Arg Val Asp
 50 55 60

Val Leu Ser Glu Ala Leu Pro Phe Ile Gln Arg Phe Lys Gly Lys Thr
 65 70 80

Val Val Val Lys Tyr Gly Gly Ala Ala Met Lys Ser Pro Glu Leu Gln
 85 90 95

Ala Ser Val Ile Arg Asp Leu Val Leu Leu Ser Cys Val Gly Leu Arg
 100 105 110

Pro Val Leu Val His Gly Gly Pro Glu Ile Asn Ser Trp Leu Gln
 115 120 125

Arg Val Gly Val Xaa Pro Gln Phe Arg Asn Gly Leu Arg Val Thr Xaa
 130 135 140

Xaa
 145 150 155 160

Lys Gln Leu Leu Ser Leu Ile Arg Pro Ala Gly Thr Thr Ala Val Gly
 165 170 175

Leu Cys Arg Lys Asp Gly Arg Ile Leu Thr Glu Arg Pro Ser Pro Asp
 180 185 190

Ala Ala Ala Leu Gly Phe Val Gly Glu Val Thr Arg Lys Asn Pro Ser
 195 200 205

Val Leu His Pro Ile Ile Ala Ser Ser His Ile Pro Val Ile Ala Thr
 210 215 220

Val Ala Ala Asp Glu Thr Gly Gln Ala Tyr Asn Ile Asn Ala Asp Thr
 225 230 235 240

Ala Ala Gly Glu Ile Ala Ala Ile Gly Ala Glu Lys Leu Leu Leu
 245 250 255

Ile Thr Asp Val Ser Gly Ile Leu Ala Asp Arg Asp Asp Pro Gly Ser
 260 265 270

Leu Val Lys Glu Ile Asp Ile Ala Gly Val Arg Arg Met Val Ala Glu
 275 280 285

Gly Lys Val Gly Gly Met Ile Pro Lys Val Gly Cys Cys Val Arg
 290 295 300

Ala Leu Ala Gln Gly Val His Thr Ala Ser Ile Ile Asp Gly Arg Val
 305 310 315 320

Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp Glu Gly Thr Gly Thr
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Met Ile Thr Gly
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 <213> *Triticum aestivum*

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 ggggtgcggc agatggtatac cgggtggcag gttgctggtg gaatgatccc aaaggtggag 180
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 <212> PRT
 <213> *Triticum aestivum*

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 20 25 30

Leu Val Lys Glu Ile Asp Ile Ala Gly Val Arg Gln Met Val Ser Gly
 35 40 45

Gly Gln Val Ala Gly Gly Met Ile Pro Lys Val Glu Cys Cys Val Arg
 50 55 60

Ala Leu Ala Gln Gly Val His Thr Ala Ser Ile Ile Asp Gly Arg Val
 65 70 75 80

Pro His Ser Leu Leu Leu Glu Ile Leu Thr Asp Glu Gly Thr Gly Thr
 85 90 95
 Met Ile Thr Gly
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 <213> Synechocystis sp.
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 Thr Val Val Val Lys Tyr Gly Gly Ala Ala Met Lys Asp Ser Asn Leu
 35 40 45
 Lys Asp Lys Val Ile Arg Asp Ile Val Phe Met Ala Ser Val Gly Ile
 50 55 60
 Arg Pro Val Val Val His Gly Gly Pro Glu Ile Asn Thr Trp Leu
 65 70 75 80
 Asp Lys Val Gly Ile Glu Pro Gln Phe Lys Asp Gly Leu Arg Val Thr
 85 90 95
 Asp Ala Ala Thr Met Asp Ile Val Glu Met Val Leu Val Gly Arg Val
 100 105 110
 Asn Lys Glu Leu Val Asn Leu Ile Asn Gln Ala Gly Gly Lys Ala Val
 115 120 125
 Gly Leu Cys Gly Lys Asp Gly Gln Leu Met Thr Ala Arg Thr Met Thr
 130 135 140
 Asn Lys Asp Val Gly Phe Val Gly Glu Val Ser Ser Val Asp Ala Arg
 145 150 155 160
 Val Val Glu Thr Leu Val Lys Ser Gly Tyr Ile Pro Val Ile Ser Ser
 165 170 175
 Val Ala Ala Asp Glu Phe Gly Gln Ala His Asn Ile Asn Ala Asp Thr
 180 185 190
 Cys Ala Gly Glu Leu Ala Ala Leu Gly Ala Glu Lys Leu Ile Leu
 195 200 205
 Leu Thr Asp Thr Arg Gly Ile Leu Arg Asp Tyr Lys Asp Pro Ser Thr
 210 215 220
 Leu Ile His Lys Leu Asp Ile Gln Gln Ala Arg Glu Leu Ile Gly Ser
 225 230 235 240
 Gly Ile Val Ala Gly Gly Met Ile Pro Lys Val Thr Cys Cys Val Arg
 245 250 255

Ser Leu Ala Gln Gly Val Arg Ala Ala His Ile Leu Asp Gly Arg Leu
260 265 270

Pro His Ala Leu Leu Leu Glu Val Phe Thr Asp Leu Gly Ile Gly Ser
275 280 285

Met Ile Val Ala Ser Gly Tyr Asp Leu
290 295

<210> 12
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<212> PRT
<213> Artificial Sequence

<220>
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<223> Xaa=Leu or Met

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<223> Xaa=Thr, Ala, or Gly

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<222> (5)
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Phe Xaa Gly Lys Thr Xaa Val Val Lys Tyr Gly Gly Ala Ala Met Lys
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Cys Val Gly Leu Xaa Pro Val Leu Val His Gly Gly Pro Glu Ile
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Asn Ser Trp Leu Xaa Arg Xaa Xaa Xaa Xaa Xaa Phe Arg Xaa Gly
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